



(19)

(11) Publication number: **200**

Generated Document.

PATENT ABSTRACTS OF JAPAN

(21) Application number: **11269515**(51) Intl. Cl.: **H01L 21/3065 H01L 29/78**(22) Application date: **22.09.99**

(30) Priority:

(43) Date of application
publication: **06.04.01**(84) Designated contracting
states:(71) Applicant: **TOSHIBA CORP**(72) Inventor: **MITSUTAKE KUNIHIE
USHIKU YUKIHIRO**

(74) Representative:

**(54) METHOD FOR
MANUFACTURING
SEMICONDUCTOR DEVICE**

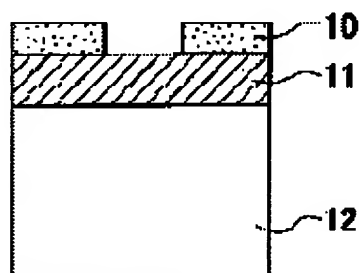
(57) Abstract:

PROBLEM TO BE SOLVED: To manufacture a hollow in a substrate with satisfactory controllability.

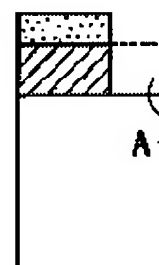
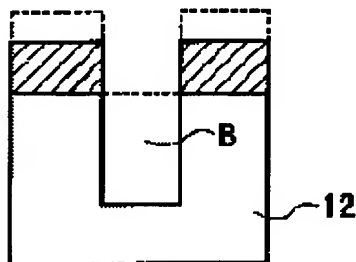
SOLUTION: This method comprises a thin film accumulating step for accumulating a thin film on a semiconductor substrate (a), a thin film opening step for forming an opening at the thin film, by removing one part of the thin film and exposing the semiconductor substrate (b), a groove forming step for forming a groove having an opening which is not larger than the opening at the semiconductor substrate by removing one part of the exposed semiconductor substrate (d), and a heat treatment step for carrying out heat treatment to the groove and closing the opening of the groove (e).

COPYRIGHT (C)2001 IPO

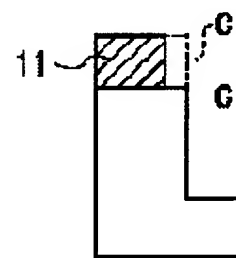
(a) 処理前



(b) 薄膜エ

(c) 反応性イオンエッチング
およびレジスト除去

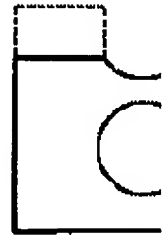
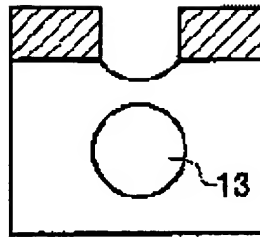
(d) 薄膜後:



(e) 熱処理

(f) 薄膜除:

COPYRIGHT (C) 2001, STC



10 : レジスト膜
11 : 薄膜

12 : 基板
13 : 空洞